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(54) Title: BUTTER-FLAVORED MEDIUM CHAIN TRIGLYCERIDE-CONTAINING COMPOSITION (57) Abstract A butter-flavored medium chain triglyceride-containing composition suitable for use as a butter or margarine substitute. The composition provides butter flavor, while providing significantly more healthful nutritive value to a consumer. The composition preferably comprises a high percentage of the medium chain triglycerides, and can further include one or more of a pigment, an aroma-enhancing material, or one or more fat-soluble vitamins.		

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Description

BUTTER-FLAVORED MEDIUM CHAIN TRIGLYCERIDE-CONTAINING COMPOSITION

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Technical Field

The field of the present invention is butter-flavored food substitutes comprising medium chain triglycerides.

10 Background of the Invention

Medium chain triglycerides ("MCTs") are generally considered to be a source of nutrition that is particularly healthy. In particular, MCTs are readily absorbed by a consumer, which can be particularly helpful where a consumer is suffering from a malabsorbtive disorder. Further, ketones that are
15 produced during the metabolism of MCTs can be utilized by muscle tissue as an energy source.

The MCTs are readily absorbed because the medium chain fatty acids comprising the MCTs are easily hydrolyzed from the triglyceride. The hydrolyzed medium chain fatty acids are then absorbed through the intestine,
20 resulting in the direct transport of the medium chain fatty acids to the liver, via the hepatic portal vein. Upon reaching the liver, the medium chain fatty acids are extensively oxidized, providing a rapid energy source.

Further, MCTs provide a reduced potential for stored calories relative to traditional chain length triglycerides, such as from corn oil.

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Summary of the Invention

The present invention is directed to a butter-flavored MCT-containing composition. Due to their biochemical nature and healthful nutritive value, MCTs in combination with a butter flavoring have been found to be a
30 highly effective butter or margarine substitute. Accordingly, the present invention is directed to a composition comprising at least about 30% MCTs in combination with a butter flavoring. Butter flavorings, which may be derived from either natural or artificial sources, are well known in the art. In a preferred embodiment, the butter flavoring comprises highly concentrated butter flavor
35 No. 93, produced by Consumers Flavoring Extracts, Brooklyn, N.Y. 11268. The composition of the present invention may also include one or more innocuous fillers, but preferably excludes triglycerides comprising short chain or long chain

fatty acids, although minor amounts of such short chain or long chain fatty acids may be present in the composition without deviating from the scope of the present invention.

In a preferred embodiment, the composition of the present invention comprises greater than about 50% MCTs, further preferably at least about 90% MCTs, still further preferably at least about 98% MCTs, and most preferably about 99% to about 99.5% MCTs by weight.

In alternative embodiments, the composition of the present invention may further comprise a pigment, an aroma-enhancing material, or one or more fat-soluble vitamins (i.e., vitamins A, D, E, and K).

In another preferred embodiment, the composition of the present invention consists essentially of MCTs and the butter flavoring. In such an embodiment, the composition does not contain significant amounts of a filler, or short chain or long chain fatty acids (either alone or as part of a triglyceride), but may include small amounts of a pigment, an aroma-enhancing material, or one or more fat-soluble vitamins.

The present invention provides an edible substance comprising MCTs and a butter flavoring in a ratio of at least about 9:1 (i.e., at least 90%), and preferably at least about 98:2. In such embodiments, it is not necessary for the MCTs to be combined with the butter flavoring prior to combination with the edible material. Accordingly, the MCTs and butter flavoring may be each added directly to the edible material during preparation of the edible material. In further preferred embodiments, the ratio is about 99:1, and further preferably about 199:1.

In still a further aspect, the present invention provides a method of treating an edible substance comprising contacting the edible substance with a composition that comprises at least about 30% MCTs in combination with the butter flavoring. In preferred embodiments, the composition comprises higher percentages of MCTs, as discussed above, and may include one or more of a pigment, an aroma-enhancing material, and one or more fat-soluble vitamins.

These and other aspects of the present invention will become evident upon reference to the following detailed description.

Detailed Description of the Invention

The present invention is directed to a butter-flavored composition containing MCTs wherein the composition is used as a butter or margarine substitute. Accordingly, the present invention provides a butter or margarine

substitute having a lower potential for stored calories and a lower content of cholesterol, while providing a more easily utilized source of energy than traditional butter or margarine. Further, the present invention provides positive health effects such as a reduced incidence of heart disease, a ready source of nutrition and facilitation of dietary treatment for persons suffering from nutritive absorptive diseases.

A MCT comprises a triglyceride backbone having attached thereto three fatty acid chains that are generally from about C₆ to C₁₂ in length, although shorter or longer chains may be included within the term, in differing contexts, as understood in the art. The three medium chain fatty acids that are attached to the triglyceride backbone of the MCT may be, but need not be, identical. The medium chain fatty acids can be either saturated or unsaturated, but are preferably saturated. Examples of medium chain fatty acids that comprise the medium chain triglycerides of the invention include C₆ (caproic fatty acid), C₈ (caprylic fatty acid), C₁₀ (capric fatty acid), and C₁₂ (lauric fatty acid), as well as mixtures thereof. In preferred embodiments, the MCTs comprise a mixture of about 60% C₈ and about 40% C₁₀ to about 70% C₈ and about 30% C₁₀. Odd-numbered chains, such as C₇, C₉, and C₁₁ fatty acids, are not commonly found, but are included within the scope of the invention. Further, the MCTs of the present invention may include minor amounts of short or long chain fatty acids.

The butter-flavored composition of the present invention can be added to an edible substance, which means any substance that is edible, whether or not the substance has nutritive value. Accordingly, the term includes all foods and cosmetic materials such as toothpaste and mouthwashes, as well as pharmaceuticals and other substances.

Accordingly, a first aspect of the present invention is directed to a composition comprising at least about 30% MCTs in combination with a butter flavoring. The composition may also include one or more innocuous fillers, numerous examples of which are well known in the art. In preferred embodiments, the composition comprises greater than about 50% MCTs, further preferably at least about 90% MCTs, still further preferably at least about 98% MCTs, and most preferably about 99% MCTs to about 99.5% MCTs. The composition may also comprise a pigment, such that the composition attains a pleasing coloring, or an aroma-enhancing component, to produce a more pleasing aromatic quality for the composition. In another preferred embodiment, the composition of the present invention further comprises one or more fat-

soluble vitamins, i.e., vitamins A, D, E and K. The ability to provide such vitamin supplements is a particular advantage of the present invention, in that typical butter and margarine substitutes are not able to provide effective transport for such fat-soluble vitamins.

5 In a further preferred embodiment, the present invention consists essentially of MCTs and the butter flavoring. By "consists essentially of," it is meant that the composition comprises the MCT and the flavoring, and may further comprise one or more materials that do not significantly affect the overall MCT content of the composition, such as flavorings, aroma enhancers, and
10 vitamins, but the composition excludes significant amounts of short chain or long chain fatty acids, or short chain or long chain bearing triglycerides, and fillers.

 In a further aspect, the present invention provides a food composition wherein the MCTs and butter flavoring are directly added to an edible substance. In such an instance, the MCTs and flavoring need not be
15 combined prior to mixing with the remainder of the edible substance. However, in accordance with the present invention, the MCTs and flavoring are present in a ratio corresponding to the ratio found in the composition described above. Accordingly, in this aspect, the present invention preferably provides an edible substance comprising MCTs and flavoring in a ratio of at least about 9:1,
20 generally at least about 98:2, typically at least about 99:1 and preferably about 199:1. Of course, such an edible food material may also comprise aroma enhancers, fat-soluble vitamins, and other appropriate additives.

 In still a further aspect, the present invention provides a method of treating an edible substance, comprising contacting the edible substance with a
25 composition comprising MCTs and a flavoring. In preferred embodiments, the composition further comprises a pigment, an aroma-enhancing material, and one or more fat-soluble vitamins, as described above.

 The present embodiments of this invention are to be considered in all respects as illustrative and not restrictive, the scope of the invention being
30 indicated by the appended claims rather than the foregoing description, and all changes that come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

Claims

1. A composition comprising at least about 30% medium chain triglycerides in combination with a butter flavoring.

2. The composition of claim 1 wherein said composition comprises greater than about 50% medium chain triglycerides.

3. The composition of claim 2 wherein said composition comprises at least about 90% medium chain triglycerides.

4. The composition of claim 3 wherein said composition comprises at least about 98% medium chain triglycerides.

5. The composition of claim 4 wherein said composition comprises about 99% to about 99.5% medium chain triglycerides.

6. The composition of claim 1, further comprising a pigment.

7. The composition of claim 6, further comprising an aroma-enhancing material.

8. The composition of claim 1, further comprising a fat-soluble vitamin.

9. The composition of claim 1 wherein said composition consists essentially of said medium chain triglycerides and said butter flavoring.

10. An edible substance comprising medium chain triglycerides and a butter flavoring in a ratio of at least about 98:2.

11. The edible substance of claim 10 wherein said ratio is about 99:1.

12. The edible substance of claim 10 wherein said ratio is about 199:1.

13. A method of treating an edible substance comprising contacting said edible substance with a composition comprising at least about 30% medium chain triglycerides in combination with a butter flavoring.

14. The method of claim 13 wherein said composition comprises greater than about 50% medium chain triglycerides.

15. The method of claim 13 wherein said composition comprises about 99% to about 99.5% medium chain triglycerides.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US94/06235

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :A23C 15/12

US CL :426/607

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 426/607, 602, 804

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
none

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
none

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Chemical Abstracts, Volume 99, No. 1, 1981 (Columbus, Ohio) USA, J. Brueckner, "Studies on the chemical properties of medium-chain triglycerides and acetoglycerides," abstract No 4280h, Zesz. Probl. Postepow Nauk Roln., 211, 91-8 (Eng).	1-15

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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